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## Occupational Employment and Wages in Tulsa, May 2013

Workers in the Tulsa Metropolitan Statistical Area had an average (mean) hourly wage of \$20.04 in May 2013, 10 percent below the nationwide average of \$22.33, according to the U.S. Bureau of Labor Statistics. Regional Commissioner Stanley W. Suchman noted that, after testing for statistical significance, wages in the local area were significantly higher than their respective national averages in only 1 of the 22 major groups—production occupations, and lower in 16. Local wages were not statistically different from the national averages in five groups.

When compared to the nationwide distribution, local employment was more highly concentrated in 6 of the 22 occupational groups, including production; construction and extraction; and office and administrative support. Conversely, 11 groups had employment shares significantly below their national representation, including education, training, and library; computer and mathematical; and business and financial operations. (See [table A](#) and [box note](#) at end of release.)

**Table A. Occupational employment and wages by major occupational group, United States and the Tulsa Metropolitan Statistical Area, and measures of statistical significance, May 2013**

Major occupational group	Percent of total employment			Mean hourly wage			
	United States	Tulsa		United States	Tulsa		Percent difference <sup>(1)</sup>
Total, all occupations .....	100.0%	100.0%		\$22.33	\$20.04	*	-10
Management .....	4.9	5.6	*	53.15	44.76	*	-16
Business and financial operations .....	5.0	4.0	*	34.14	29.29	*	-14
Computer and mathematical .....	2.8	1.6	*	39.43	31.23	*	-21
Architecture and engineering .....	1.8	2.0	*	38.51	37.95		-1
Life, physical, and social science .....	0.9	0.5	*	33.37	37.88		14
Community and social service .....	1.4	1.2	*	21.50	17.89	*	-17
Legal .....	0.8	0.9		47.89	42.60		-11
Education, training, and library .....	6.3	4.9	*	24.76	19.30	*	-22
Arts, design, entertainment, sports, and media .....	1.3	0.9	*	26.72	22.18	*	-17
Healthcare practitioners and technical .....	5.8	5.7		35.93	31.45	*	-12
Healthcare support .....	3.0	2.6	*	13.61	12.69	*	-7
Protective service .....	2.5	2.0		20.92	17.23	*	-18
Food preparation and serving related .....	9.0	8.7	*	10.38	9.46	*	-9
Building and grounds cleaning and maintenance .....	3.2	2.7	*	12.51	10.68	*	-15
Personal care and service .....	3.0	2.5	*	11.88	10.65	*	-10
Sales and related .....	10.6	10.7		18.37	17.29	*	-6
Office and administrative support .....	16.2	17.5	*	16.78	15.75	*	-6
Farming, fishing, and forestry .....	0.3	0.1	*	11.70	12.22		4
Construction and extraction .....	3.8	5.2	*	21.94	17.43	*	-21

Note: See footnotes at end of table.

**Table A. Occupational employment and wages by major occupational group, United States and the Tulsa Metropolitan Statistical Area, and measures of statistical significance, May 2013 - Continued**

Major occupational group	Percent of total employment			Mean hourly wage			
	United States	Tulsa		United States	Tulsa		Percent difference <sup>(1)</sup>
Installation, maintenance, and repair .....	3.9	4.5	*	21.35	19.48	*	-9
Production .....	6.6	9.4	*	16.79	18.28	*	9
Transportation and material moving .....	6.8	6.7		16.28	17.30		6

(1) A positive percent difference measures how much the mean wage in Tulsa is above the national mean wage, while a negative difference reflects a lower wage.

\* The percent share of employment or mean hourly wage for this area is significantly different from the national average of all areas at the 90-percent confidence level.

One occupational group—production—was chosen to illustrate the diversity of data available for any of the 22 major occupational categories. Tulsa had 39,570 jobs in production, accounting for 9.4 percent of local area employment, significantly higher than the 6.6-percent national share. The local average hourly wage for this occupational group was \$18.28, nearly 10 percent above the national average of \$16.79.

With employment of 5,040, team assemblers was one of the largest occupations within the production group, as were welders, cutters, solderers, and brazers (4,180) and production worker helpers (2,810). Among the higher paying jobs were petroleum pump system operators, refinery operators, and gaugers and first-line supervisors of production and operating workers, with mean hourly wages of \$40.38 and \$28.58, respectively. At the lower end of the wage scale were laundry and dry-cleaning workers (\$9.92) and packaging and filling machine operators and tenders (\$11.09). (Detailed occupational data for production workers are presented in [table 1](#); for a complete listing of detailed occupations go to [www.bls.gov/oes/current/oes\\_46140.htm](http://www.bls.gov/oes/current/oes_46140.htm).)

Location quotients allow us to explore the occupational make-up of a metropolitan area by comparing the composition of jobs in an area relative to the national average. (See [table 1](#).) For example, a location quotient of 2.0 indicates that an occupation accounts for twice the share of employment in the area than it does nationally. In the Tulsa metropolitan area, above average concentrations of employment were found in many of the occupations within the production group. For instance, aircraft structure, surfaces, rigging, and systems assemblers were employed at 10.2 times the national rate in Tulsa, and petroleum pump system operators, refinery operators, and gaugers, at 4.6 times the U.S. average. Tulsa’s aircraft structure, surfaces, rigging, and systems assemblers location quotient ranked third-highest in the country among all metropolitan areas, trailing only Seattle, Washington (29.53) and Wichita, Kansas (21.62). On the other hand, electrical and electronic equipment assemblers had a location quotient of 1.0 in Tulsa, meaning the local employment share in this particular occupation matched the national average.

These statistics are from the Occupational Employment Statistics (OES) survey, a federal-state cooperative program between BLS and State Workforce Agencies, in this case, the Oklahoma Employment Security Commission.

## Note

OES wage and employment data for the 22 major occupational groups in the Tulsa Metropolitan Statistical Area were compared to their respective national averages based on statistical significance testing. Only those occupations with wages or employment shares above or below the national wage or share after testing for significance at the 90-percent confidence level meet the criteria.

**Note:** A value that is statistically different from another does not necessarily mean that the difference has economic or practical significance. Statistical significance is concerned with the ability to make confident statements about a universe based on a sample. It is entirely possible that a large difference between two values is not significantly different statistically, while a small difference is, since both the size and heterogeneity of the sample affect the relative error of the data being tested.

## Technical Note

The Occupational Employment Statistics (OES) survey is a semiannual mail survey measuring occupational employment and wage rates for wage and salary workers in nonfarm establishments in the United States. Guam, Puerto Rico, and the Virgin Islands are also surveyed, but their data are not included in the national estimates. OES estimates are constructed from a sample of about 1.2 million establishments. Forms are mailed to approximately 200,000 sampled establishments in May and November each year for a 3-year period. May 2013 estimates are based on responses from six semiannual panels collected in May 2013, November 2012, May 2012, November 2011, May 2011, and November 2010. The overall national response rate for the six panels is 75.3 percent based on establishments and 71.6 percent based on employment. The sample in the Tulsa Metropolitan Statistical Area included 3,615 establishments with a response rate of 77 percent. For more information about OES concepts and methodology, go to [www.bls.gov/news.release/ocwage.tn.htm](http://www.bls.gov/news.release/ocwage.tn.htm).

The OES survey provides estimates of employment and hourly and annual wages for wage and salary workers in 22 major occupational groups and 821 detailed occupations for the nation, states, metropolitan statistical areas, metropolitan divisions, and nonmetropolitan areas. In addition, employment and wage estimates for 94 minor groups and 458 broad occupations are available in the national data. OES data by state and metropolitan/nonmetropolitan area are available from [www.bls.gov/oes/current/oessrcst.htm](http://www.bls.gov/oes/current/oessrcst.htm) and [www.bls.gov/oes/current/oessrcma.htm](http://www.bls.gov/oes/current/oessrcma.htm), respectively.

The May 2013 OES estimates are based on the 2010 Standard Occupational Classification (SOC) system and the 2012 North American Industry Classification System (NAICS). Information about the 2010 SOC is available on the BLS website at [www.bls.gov/soc](http://www.bls.gov/soc) and information about the 2012 NAICS is available at [www.bls.gov/bls/naics.htm](http://www.bls.gov/bls/naics.htm).

### Area definitions

The substate area data published in this release reflect the standards and definitions established by the U.S. Office of Management and Budget.

The **Tulsa Metropolitan Statistical Area (MSA)** Creek, Okmulgee, Osage, Pawnee, Rogers, Tulsa, and Wagoner Counties in Oklahoma.

**Additional information**

OES data are available on our regional web page at [www.bls.gov/regions/southwest](http://www.bls.gov/regions/southwest). Answers to frequently asked questions about the OES data are available at [www.bls.gov/oes/oes\\_ques.htm](http://www.bls.gov/oes/oes_ques.htm). Detailed technical information about the OES survey is available in our Survey Methods and Reliability Statement on the BLS website at [www.bls.gov/oes/2013/may/methods\\_statement.pdf](http://www.bls.gov/oes/2013/may/methods_statement.pdf).

Information in this release will be made available to sensory impaired individuals upon request – Voice phone: 202-691-5200; Federal Relay Service: 1-800-877-8339.

**Table 1. Employment and wage data from the Occupational Employment Statistics survey, by occupation, Tulsa Metropolitan Statistical Area, May 2013**

Occupation <sup>(1)</sup>	Employment		Mean wages	
	Level <sup>(2)</sup>	Location quotient <sup>(3)</sup>	Hourly	Annual <sup>(4)</sup>
Production occupations .....	39,570	1.4	\$18.28	\$38,020
First-line supervisors of production and operating workers .....	2,620	1.4	\$28.58	\$59,450
Aircraft structure, surfaces, rigging, and systems assemblers .....	1,380	10.2	\$19.67	\$40,910
Coil winders, tapers, and finishers .....	(5)	(5)	\$17.11	\$35,580
Electrical and electronic equipment assemblers .....	630	1.0	\$14.00	\$29,120
Electromechanical equipment assemblers .....	610	3.9	\$17.77	\$36,970
Engine and other machine assemblers .....	490	3.9	\$17.23	\$35,840
Structural metal fabricators and fitters .....	700	2.8	\$17.03	\$35,430
Team assemblers .....	5,040	1.5	\$15.66	\$32,560
Assemblers and fabricators, all other .....	410	0.5	\$14.68	\$30,530
Bakers .....	530	1.0	\$11.65	\$24,230
Butchers and meat cutters .....	410	0.9	\$11.92	\$24,790
Meat, poultry, and fish cutters and trimmers .....	70	0.1	\$12.99	\$27,020
Food batchmakers .....	270	0.8	\$11.89	\$24,740
Food cooking machine operators and tenders .....	150	1.4	\$11.79	\$24,530
Computer-controlled machine tool operators, metal and plastic .....	890	2.0	\$19.84	\$41,270
Computer numerically controlled machine tool programmers, metal and plastic .....	60	0.8	\$25.28	\$52,590
Extruding and drawing machine setters, operators, and tenders, metal and plastic .....	80	0.4	\$17.60	\$36,600
Forging machine setters, operators, and tenders, metal and plastic .....	90	1.3	\$23.21	\$48,280
Rolling machine setters, operators, and tenders, metal and plastic .....	160	1.6	\$17.45	\$36,300
Cutting, punching, and press machine setters, operators, and tenders, metal and plastic .....	1,160	2.0	\$15.56	\$32,370
Drilling and boring machine tool setters, operators, and tenders, metal and plastic .....	330	5.3	\$17.89	\$37,220
Grinding, lapping, polishing, and buffing machine tool setters, operators, and tenders, metal and plastic .....	300	1.3	\$14.64	\$30,450
Lathe and turning machine tool setters, operators, and tenders, metal and plastic .....	260	2.0	\$19.21	\$39,960
Milling and planing machine setters, operators, and tenders, metal and plastic .....	80	1.0	\$14.13	\$29,380
Machinists .....	2,540	2.0	\$18.28	\$38,030
Foundry mold and coremakers .....	70	1.6	\$12.53	\$26,070
Molding, coremaking, and casting machine setters, operators, and tenders, metal and plastic .....	170	0.4	\$13.76	\$28,610
Multiple machine tool setters, operators, and tenders, metal and plastic .....	760	2.6	\$14.99	\$31,180
Tool and die makers .....	220	0.9	\$23.71	\$49,320
Welders, cutters, solderers, and brazers .....	4,180	3.7	\$19.85	\$41,280
Welding, soldering, and brazing machine setters, operators, and tenders .....	440	2.7	\$18.98	\$39,480
Heat treating equipment setters, operators, and tenders, metal and plastic .....	130	2.0	\$17.17	\$35,710
Plating and coating machine setters, operators, and tenders, metal and plastic .....	230	2.0	\$14.11	\$29,340
Tool grinders, filers, and sharpeners .....	70	1.9	\$14.81	\$30,800
Prepress technicians and workers .....	70	0.6	\$16.58	\$34,490
Printing press operators .....	300	0.6	\$15.89	\$33,040
Print binding and finishing workers .....	90	0.5	\$13.68	\$28,460
Laundry and dry-cleaning workers .....	660	1.0	\$9.92	\$20,640
Pressers, textile, garment, and related materials .....	90	0.6	\$9.00	\$18,720
Sewing machine operators .....	140	0.3	\$11.64	\$24,210
Upholsterers .....	50	0.6	\$17.52	\$36,450

Note: See footnotes at end of table.

**Table 1. Employment and wage data from the Occupational Employment Statistics survey, by occupation, Tulsa Metropolitan Statistical Area, May 2013 - Continued**

Occupation <sup>(1)</sup>	Employment		Mean wages	
	Level <sup>(2)</sup>	Location quotient <sup>(3)</sup>	Hourly	Annual <sup>(4)</sup>
Cabinetmakers and bench carpenters .....	180	0.7	\$14.69	\$30,560
Sawing machine setters, operators, and tenders, wood .....	40	0.3	\$13.34	\$27,740
Woodworking machine setters, operators, and tenders, except sawing .....	(5)	(5)	\$13.87	\$28,850
Power plant operators .....	160	1.2	\$28.95	\$60,220
Stationary engineers and boiler operators .....	150	1.3	\$24.22	\$50,370
Water and wastewater treatment plant and system operators .....	280	0.8	\$18.00	\$37,440
Gas plant operators .....	140	3.1	27.95	58,140
Petroleum pump system operators, refinery operators, and gaugers .....	610	4.61	40.38	83,990
Chemical equipment operators and tenders .....	160	0.8	17.68	36,770
Separating, filtering, clarifying, precipitating, and still machine setters, operators, and tenders .....	60	0.4	9.80	20,380
Crushing, grinding, and polishing machine setters, operators, and tenders .....	30	0.4	15.96	33,200
Grinding and polishing workers, hand .....	220	2.2	13.05	27,150
Mixing and blending machine setters, operators, and tenders .....	200	0.5	20.00	41,590
Cutters and trimmers, hand .....	80	1.8	13.94	28,990
Cutting and slicing machine setters, operators, and tenders .....	260	1.4	13.79	28,690
Extruding, forming, pressing, and compacting machine setters, operators, and tenders .....	(5)	(5)	15.36	31,950
Furnace, kiln, oven, drier, and kettle operators and tenders .....	150	2.4	14.97	31,150
Inspectors, testers, sorters, samplers, and weighers ..	2,780	1.9	23.98	49,890
Jewelers and precious stone and metal workers .....	50	0.7	19.37	40,290
Dental laboratory technicians .....	200	1.8	17.06	35,480
Medical appliance technicians .....	(5)	(5)	13.56	28,210
Ophthalmic laboratory technicians .....	190	2.1	12.76	26,530
Packaging and filling machine operators and tenders ..	960	0.8	11.09	23,060
Coating, painting, and spraying machine setters, operators, and tenders .....	580	2.1	17.36	36,110
Painters, transportation equipment .....	260	1.7	20.22	42,050
Painting, coating, and decorating workers .....	50	0.9	12.92	26,880
Photographic process workers and processing machine operators .....	100	0.9	12.44	25,880
Cleaning, washing, and metal pickling equipment operators and tenders .....	30	0.6	14.87	30,940
Etchers and engravers .....	(5)	(5)	15.46	32,150
Molders, shapers, and casters, except metal and plastic .....	90	0.9	19.47	40,490
Paper goods machine setters, operators, and tenders .....	560	1.9	21.29	44,280
Helpers-production workers .....	2,810	2.1	14.21	29,550
Production workers, all other .....	380	0.6	15.91	33,100

(1) For a complete listing of all detailed occupations in the Tulsa MSA, see [www.bls.gov/oes/current/oes\\_46140.htm](http://www.bls.gov/oes/current/oes_46140.htm)

(2) Estimates for detailed occupations do not sum to the totals because the totals include occupations not shown separately. Estimates do not include self-employed workers.

(3) The location quotient is the ratio of the area concentration of occupational employment to the national average concentration. A location quotient greater than one indicates the occupation has a higher share of employment than average, and a location quotient less than one indicates the occupation is less prevalent in the area than average.

(4) Annual wages have been calculated by multiplying the hourly mean wage by a 'year-round, full-time' hours figure of 2,080 hours; for those occupations where there is not an hourly mean wage published, the annual wage has been directly calculated from the reported survey data.

(5) Estimates not released.